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B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols) C120

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practical, search terms used)

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| | ENTS CONSIDERED TO BE RELEVANT | |
|-----------|---|-----------------------|
| Category* | Citation of document, with indication, where appropriate, of the relevant passages | Relevant to claim No. |
| X | DATABASE EMBL 4 March 2000 (2000-03-04), XP002394969 Database accession no. L15697 abstract | 1,3 |
| X | DATABASE EMBL 21 May 2003 (2003-05-21), XP002394973 Database accession no. AB068711 abstract | 2 |
| Х | WO 92/19774 A (DANA FARBER CANCER INSTITUTE) 12 November 1992 (1992-11-12) page 18 - page 19 | 1-20 |
| | | |

| X Further documents are listed in the continuation of Box C. | X See patent family annex. |
|---|--|
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International application No PCT/US2006/007747

C(Continuation). DOCUMENTS CONSIDERED TO BE RELEVANT Balawant to claim No. Category* Citation of document, with indication, where appropriate, of the relevant passages WHILEY DAVID M ET AL: "Simultaneous 1-20 X detection and differentiation of human polyomaviruses JC and BK by a rapid and sensitive PCR-ELAHA assay and a survey of the JCV subtypes within an Australian population.' JOURNAL OF MEDICAL VIROLOGY, vol. 72, no. 3, March 2004 (2004-03), pages 467-472, XP002394965 ISSN: 0146-6615 the whole document χ VOELTER C ET AL: "Screening human tumor 1-20 samples with a broad-spectrum polymerase chain reaction method for the detection of polyomaviruses" VIROLOGY, ACADEMIC PRESS, ORLANDO, US, vol. 237, no. 2, 27 October 1997 (1997-10-27), pages 389-396, XP002242736 ISSN: 0042-6822 the whole document FEDELE C G ET AL: "Quantitation of 1-20 X polyomavirus DNA by a competitive nested polymerase chain reaction JOURNAL OF VIROLOGICAL METHODS. vol. 88, no. 1, July 2000 (2000-07), pages 51-61, XP002394966 ISSN: 0166-0934 the whole document 1-20 X FEDELE C G ET AL: "Multiplex polymerase chain reaction for the simultaneous detection and typing of polyomavirus JC. BK and SV40 DNA in clinical samples" JOURNAL OF VIROLOGICAL METHODS. vol. 82, no. 2, October 1999 (1999-10), pages 137-144, XP002394967 ISSN: 0166-0934 the whole document VILCHEZ REGIS A ET AL: "Detection of 1-20 χ polyomavirus simian virus 40 tumor antigen DNA in AIDS-related systemic non-Hodgkin lymphoma" JAIDS JOURNAL OF ACQUIRED IMMUNE DEFICIENCY SYNDROMES. vol. 29, no. 2, 1 February 2002 (2002-02-01), pages 109-116, XP009071192 ISSN: 1525-4135 the whole document -/--

Form PCT/ISA/210 (continuation of second sheet) (April 2005)

International application No PCT/US2006/007747

C(Continuation). DOCUMENTS CONSIDERED TO BE RELEVANT Category* Citation of document, with indication, where appropriate, of the relevant passages Relevant to claim No. WO 02/099130 A (UNIVERSITY COLLEGE LONDON: Α GRIFFITHS, DAVID, JOHN; KELLAM, PAUL; WEISS) 12 December 2002 (2002-12-12) WO 02/099129 A (UNIVERSITY COLLEGE LONDON: Α GRIFFITHS, DAVID, JOHN; KELLAM, PAUL; WEISS) 12 December 2002 (2002-12-12)

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| Patent document cited in search report | | Publication date | Patent family member(s) | Publication date |
|---|---|---------------------|----------------------------|------------------|
| WO 9219774 | Α | 12-11-1992 | US 5213796 A | 25-05-1993 |
| WO 02099130 | A | 12-12-2002 | NONE | |
| WO 02099129 | A | 12-12-2002 | AU 2002311446 A1 | 16-12-2002 |